

XIII. *A Monograph of British Braconidæ.* Part VI.
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PLATE VII.

XXIV. ALYSIIDES. (Continued from Ent. Tr., 1894, p. 534.)

xiii. ADELURA, Förster.

Först., Verh. Pr. Rheinl., 1862, p. 267.

MAXILLARY palpi 5-, labial 4-jointed. Antennæ long, slender, multiarticulate; 4th joint not, or scarcely, longer than the 3rd. Mesothoracic sutures incomplete; a dorsal fovea before the scutellum; furrow of the mesopleuræ more or less distinct, either punctate or smooth; metathorax rugulose, without a longitudinal carina. First cubital areolet separated from the 1st discoidal; 2nd complete; 1st intercubital nervure shorter than the 2nd abscissa; stigma elongate, attenuated at both ends, or linear; recurrent and anal nervures not exactly interstitial; pabrachial areolet of the hindwings at least half as long as the præbrachial; præbrachial transverse nervure obsolete. Abdomen depressed, widened behind in the ♀, linear in the ♂; 1st segment rugulose, narrow, linear, with median spiracular tubercles; 2nd and following segments smooth. Terebra concealed, or very short.

Förster invented this genus for the reception of *Alysia florimela*, Hal., referring the other cognate species to his genera *Dapsilarthra* and *Grammospila*, which he separated widely both from *Adelura* and from each other. I am acquainted with a new species which cannot be placed in any of those genera, and for which another new genus becomes necessary, if the Försterian system be accepted. This being objectionable, I have reassembled the scattered species under the heading *Adelura*, which now represents the primitive Section XII. of Haliday's *Alysia*, *Brachycentri*. These species are all closely related, and form a natural group distinguished by their short terebra, and a habit of body resembling that of *Dacnusa*; one species indeed is only separable from *Dacnusa* on account of its three cubital areolets.

There is, however, one dismemberment of the *Brachycentri* which seems permissible, that of *Alysia perditia*, Hal.; that author himself, on second thoughts, referred it to a separate section, now the genus *Anisocyrtia*, Förster.

TABLE OF SPECIES.

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|------|-----|--|-------------------------------|
| (2) | 1. | Stigma oval, lanceolate, broad in the middle, attenuated towards the extremity, emitting the radial nervure just before the middle | 1. <i>florimela</i> , Hal. |
| (1) | 2. | Stigma linear, scarcely, or not at all, broader in the middle, attenuated towards the extremity, emitting the radial nervure not far from the base. | |
| (6) | 3. | Stigma not reaching beyond the middle of the radial areolet; 2nd cubital areolet narrowed on the outer side. | |
| (5) | 4. | Abdomen after the 1st segment reddish or testaceous, the posterior segments cinctured more or less distinctly with dark bands | 2. <i>rufiventris</i> , Nees. |
| (4) | 5. | Abdomen black; segment 2 pitchy at the base | 3. <i>Isabella</i> , Hal. |
| (3) | 6. | Stigma as long as $\frac{3}{4}$ of the radial areolet, or longer, and in that case confounded with the metacarp; 2nd cubital areolet hardly, or not at all, narrowed on the outer side. | |
| (8) | 7. | Second abscissa of the radial nervure not longer than the 1st intercubital nervure; 2nd cubital areolet very short, not longer than broad; radial areolet somewhat lanceolate, not reaching the tip of the wing. | 4. <i>Dictynna</i> , Marsh. |
| (7) | 8. | Second abscissa longer than the 1st intercubital nervure; 2nd cubital areolet longer than broad; radial areolet cultriform, almost reaching the tip of the wing. | |
| (10) | 9. | Length, $1\frac{3}{4}$ line; antennæ ♀ 50-jointed ... | 5. <i>apii</i> , Curtis. |
| (9) | 10. | Length, 1 line; antennæ ♀ 35-jointed ... | 6. <i>Sylvia</i> , Hal. |

1. *Adelura florimela*, Hal.

Alysia florimela, Hal., Ent. Mag., v., 239, ♀, pl. xvii., fig. 20 (wing).

Adelura florimela, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 420.

♀. Black, shining. Head much wider than the thorax; mandibles red; palpi pale. Antennæ slender, twice as long as the body, 48-50-jointed, the two basal joints red, the 4th a little longer than the 3rd (which is not the case in the other species). Furrow of the mesopleuræ rugose; mesothoracic sutures hardly inchoate; a short linear impression before the scutellum; metathorax finely rugulose. Wings hyaline; squamula red; nervure and stigma

blackish, the latter shorter than in the other species, oval, lanceolate, widest in the middle, attenuated towards the extremity, emitting the radial nervure just before the middle; radial areolet cultriform, not reaching the tip of the wing; 2nd cubital areolet not narrowed towards the outer end; 3rd abscissa almost straight; 1st intercubital nervure shorter than the 2nd abscissa; pabrachial areolet of the hindwings hardly longer than half the præbrachial. Legs red; tips of hind tibiæ, and their tarsi, obscure. First abdominal segment linear, twice as long as its apical breadth, finely striolate; tubercles prominent. Terebra subexserted. Male unknown. Length, 2; wings, 4 lines.

Not common; I took a single specimen in Yorkshire; the original type was captured by Walker in the London district.

2. *Adelura rufiventris*, Nees.

Bassus rufiventris, Nees, Berl. Mag., vi., 1814, p. 213, ♀.

Alysia rufiventris, Nees, Mon., i., 253, ♀; Kawall, Stett. Zeit., xvi., 1855, p. 231, ♂.

Alysia flaviventris, Hal., Ent. Mag., v., 240, ♀.

Adelura rufiventris, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 421.

♀. Black, shining; abdominal segments after the 1st either dark red or flavo-testaceous, the posterior segments cinctured more or less distinctly with dark bands. Oral parts and palpi red. Antennæ very slender, one-half longer than the body, 27-30-jointed, blackish with the two basal joints red or testaceous; 3rd joint a little longer than the 4th. Dorsal fovea of the mesothorax minute; metathorax punctulate. Wings hyaline; squamula yellowish; nervures and stigma testaceous, the latter linear, scarcely reaching the middle of the radial areolet, emitting the radial nervure before one-fourth of its length; radial areolet cultriform, reaching the tip of the wing; 2nd cubital areolet elongate, scarcely narrowed towards the outer end. Legs red or yellowish; claws obscure. Abdomen oval; 1st segment obconic, deplanate, black, punctulate; the following segments smooth. Terebra very short. ♂. According to Kawall differs in having the face, mandibles, palpi, and scutellum obscurely luteous; abdomen pitchy-red; legs pale luteous. Length, $\frac{4}{5}$; wings, $2\frac{1}{2}$ lines.

Very rare in England, but taken once by Walker; Gravenhorst found it near Göttingen, and Kawall briefly mentions the male among the insects of Kurland.

3. *Adelura isabella*, Hal.

Alysia isabella, Hal., Ent. Mag., v., 240, ♂.

Adelura isabella, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 422, ♂ ♀.

♀. Black; 2nd abdominal segment pitchy at the base; mandibles red. Antennæ twice as long as the body, fuscous with the two basal joints red, 40-41-jointed; 3rd joint rather longer than the 4th. Dorsal fovea of the mesothorax shallow, circular. Wings hyaline; squamula, nervures, and stigma testaceous, the last linear, not quite reaching the middle of the radial areolet, afterwards confounded with the metacarp, emitting the radial nervure before one-third of its length; 2nd cubital areolet elongate, narrow, contracted towards the outer end; 2nd abscissa more than twice as long as the 1st intercubital nervure; 3rd abscissa curved. Legs flavo-testaceous; tips of the hind tibiæ dusky. Abdomen short, suboval, widened behind. Terebra subinserted. ♂ Similar; abdomen linear. Length, $1\frac{1}{2}$; wings, $3\frac{1}{4}$ lines.

Not common. I possess both sexes; the ♀ (unknown to Haliday) is from Devonshire; the ♂ type was taken by Walker in the London district. The species constitutes Förster's genus *Grammospila*.

4. *Adelura dictynna*, Marsh.

Adelura dictynna, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 423, ♂ ♀.

♀. Black, shining; abdomen piceous; mandibles reddish. Antennæ filiform, slender, almost twice as long as the body, dull testaceous towards the base, 36-jointed, joints 3 and 4 of equal length. Fovea of the mesonotum linear. Wings hyaline, very iridescent; squamula flavo-testaceous; nervures and stigma fusco-testaceous, the latter linear, and so narrow as hardly to be distinguished from the metacarp, emitting the radial nervure before one-third of its length; 2nd abscissa not longer than the 1st intercubital nervure; 3rd abscissa sinuated before the extremity, as in *Dacnusa*; 2nd intercubital nervure decolorous but visible; 2nd cubital areolet very short, not longer than broad, and not larger than the 1st; radial areolet somewhat lanceolate, not reaching the tip of the wing; recurrent and anal nervures both interstitial; pabrachial areolet of the hindwing longer than half the

præbrachial. Legs testaceous; hind tibiæ and tarsi slightly dusky. Abdomen widened behind, as in *florimela* (sp. 1). Terebra concealed. ♂ Similar; antennæ broken, but still retaining 40 joints; dorsal fovea circular; wings slightly infumated, iridescent; nervures and stigma fuscous, the latter somewhat thicker and more determinate than in the ♀. Length, $1\frac{3}{4}$; wings, 4 lines.

This species was discovered by Dr. Capron, who gave me a pair, and others, doubtless, exist in his now inaccessible collection. It is distinguished by the small size of the 2nd cubital areolet, not larger than the 1st; the 2nd intercubital nervure being colourless, gives the wing, at first sight, the appearance of having only two cubital areolets, as in *Dacnusa*, to which genus the present insect makes in other respects a near approach.

5. *Adelura apii*, Curtis.

Alysia apii, Curtis, B. E., pl. cxli.; Hal., Ent. Mag., v., 239, ♀, pl. xvii., fig. 21 (wing).

Adelura apii, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 424, ♂ ♀.

♀. Black, shining; abdomen sometimes more or less piceous or subrufescent. Face thickly punctulate; mandibles red; palpi pale. Antennæ very slender, twice as long as the body, 50-jointed, the two basal joints red; joints 3 and 4 of equal length. Fovea of the mesonotum subcircular; furrow of the mesopleuræ indistinct, smooth; metathorax punctate. Wings hyaline with a dusky tinge, very iridescent; squamula testaceous; nervures and stigma blackish, the latter very long and attenuated, scarcely distinct from the metacarp, reaching beyond the middle of the radial areolet, emitting the radial nervure before one-fourth of its length; radial areolet cultriform, reaching the tip of the wing; 3rd abscissa straight; 2nd cubital areolet elongate, not narrowed towards the outer end; pabrachial areolet of the hindwing one-third shorter than the præbrachial, which also is unusually short. Legs rufo-testaceous; hind tarsi and tips of hind tibiæ more or less dusky. Abdomen as in *florimela* (sp. 1); posterior segments sometimes black, like the 1st. Terebra very short. ♂ Similar; abdomen narrower, with parallel sides. Length, $1\frac{2}{3}$; wings, $3\frac{2}{3}$ – $4\frac{1}{3}$ lines.

Parasite of *Acidia heraclei*, L., a fly the larva of which lives on the celery (*Apium graveolens*). *Adelura apii* has been noticed in England, Ireland, and Holland, and is probably the commonest species of the genus.

6. *Adelura sylvia*, Hal.

Alysia sylvia, Hal., Hym. Brit., ii., 25, ♀.

Adelura sylvia, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 424, ♀.

♀. Similar to the preceding, but much smaller. Black; mandibles red; palpi pale. Antennæ twice as long as the body, black, pale red at the base, 35-jointed, all the joints longer than in *apii*; 3rd very little longer than the 4th. Wings hyaline; radicle whitish; squamula, nervures, and stigma pale brown; 2nd cubital areolet somewhat longer than that of *apii*; radial areolet more distant from the tip of the wing. The other characters are those of *apii*. ♂ unknown. Length, 1 line.

Uncommon; found only by Haliday, in woods in the north of Ireland.

xiv. ANISOCYRTA, Förster.

Först., Verh. Pr. Rheinl., 1862, p. 268.

Third joint of the antennæ longer than the 4th. Furrow of the mesopleuræ effaced. Stigma linear, very narrow, reaching beyond the middle of the radial areolet, emitting the radial nervure from its extreme base; 1st abscissa so obliquely placed as to be almost in a line with the 2nd, not forming any distinct angle; 2nd abscissa twice as long as the 1st intercubital nervure; 2nd cubital areolet elongate, not narrowed towards the outer end; radial areolet cultriform, reaching the tip of the wing; recurrent nervure almost everted; anal nervure not interstitial. Terebra elongate.

1. *Anisocyrtia perditia*, Hal.

Alysia perditia, Hal., Ent. Mag., v., 241, ♂; v., 519, ♀, pl. xvii., fig. 22 (wing).

Anisocyrtia perditia, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 425, ♂ ♀.

♂. Black, shining; mandibles and palpi red. Antennæ nearly one-half longer than the body, 36-jointed; 1st joint red, blackish beneath, 2nd entirely red, 3rd very long. Wings slightly

infumated ; squamula red ; nervures and stigma blackish ; pobrachial areolet of the hindwing extending to the middle of the præbrachial ; præbrachial transverse nervure distinct. Legs red ; hind tarsi and tips of hind tibiæ faintly tinged with dusky. ♀. First abdominal segment widened at the end. Terebra a little longer than the abdomen. Length, 2 ; wings, 4 lines.

Not known since the time of Haliday and Walker, the former of whom discovered this insect in the Hebrides, the latter in Finmark.

XV. PROSAPHA, Förster.

Först., Verh. Pr. Rheinl., 1862, p. 266.

Fourth joint of the antennæ not longer than the 3rd. Stigma elongate, cuneiform ; 2nd cubital areolet complete ; 1st intercubital nervure shorter than the 2nd abscissa ; 1st cubital areolet separated from the 1st discoidal ; recurrent nervure everted ; anal nervure nearly interstitial ; pobrachial areolet of the hindwing reaching to the middle of the præbrachial. Abdomen of the ♀ compressed. Terebra exerted, curved.

This genus, like the preceding, is unknown to me ; it comprehends Haliday's 13th Section, *Macrocarpi*, which, according to that author, presents the same characters as the 15th, *Acarpi*, gen. *Aspilota*, Först., except as to the wings. The character given by Förster for his genus *Prosapha*, is taken from the ♂ only, to the exclusion of the ♀. Haliday makes two species, but thinks it highly probable that the second is only the female of the first, notwithstanding the difference of their wings.

- (2) 1. Stigma very large, occupying more space than the 2nd cubital areolet, and cutting off the 1st abscissa of the radial nervure 1. *speculum*, Hal. ♂.
 (1) 2. Stigma much longer and more slender, con- founded towards its apex with the metacarp, and leaving exposed a portion of the 2nd abscissa 2. *venusta*, Hal. ♀.

1. *Prosapha speculum*, Hal.

Alysia speculum, Hal., Ent. Mag., v., 241, ♂ ; pl. xvii., fig. 19 (wing).

Prosapha speculum, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 427, ♂.

♀. Black, shining ; 1st abdominal segment red ; mandibles red. Antennæ as long as the body, 16-18-jointed, the two basal joints

red. Mesothoracic sutures effaced; furrow of the mesopleuræ punctulate; metathorax rugulose. Wings hyaline; squamula ferruginous; nervures and stigma black, the latter very stout at the base, acuminate at the apex, emitting the radial nervure before the middle; 2nd cubital areolet elongate, much narrowed towards the outer end; radial areolet not reaching the tip of the wing, sublanceolate; 2nd discoidal areolet very narrow. Legs red; femora and tibiæ sometimes dark at the apex. Abdomen narrow, somewhat depressed; 1st segment rufous, 2nd rufescent at the base, all the following dark piceous. Length, $\frac{3}{4}$; wings, $1\frac{3}{4}$ lines.

Found by Haliday in North Ireland, and once by Walker in the London district; very rare.

2. *Prosapha venusta*, Hal.

Alysia venusta, Hal., Ent. Mag., v., 242, ♀.

Prosapha venusta, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 427, ♀.

♀. Piceous black; 1st abdominal segment red; mandibles red. Antennæ shorter than the body, 14-17-jointed, the two basal joints red; apical joints oval. Thorax as in the preceding. Wings hyaline; squamula brownish; nervures and stigma pale brown; 2nd cubital areolet not so much narrowed towards the outer end; radial areolet cultriform, reaching the tip of the wing. Legs red. Abdomen strongly compressed, as in the genus *Aspilota*; 1st segment sublinear, rugulose, elevated; 2nd the longest; abdomen, viewed sideways, subtriangular. Terebra exerted, short. Length, $\frac{3}{4}$ -1; wings, $1\frac{1}{2}$ -2 lines.

Taken more than once in England, but very rare.

xvi. MESOCRINA, Förster.

Först., Verh. Pr. Rheinl., 1862, p. 266.

Male unknown. Third joint of the antennæ longer than the 4th. Mesothoracic sutures inchoate, effaced posteriorly; an oblong fovea before the scutellum. Stigma oval, lanceolate, distinct, emitting the radial nervure from the middle, or just beyond it; 1st cubital areolet separated from the 1st discoidal; 2nd complete; 1st intercubital nervure a little shorter than the 2nd abscissa. Abdomen strongly compressed. Terebra exerted, short.

To this genus, hitherto unnoticed, belong two undescribed female specimens, specifically distinct, in my collection. They are not in the best possible condition, but their descriptions will, I hope, prove intelligible. The form of the stigma and the neuration in general forbid me to refer them to the genus *Aspilota*, with which they have many characters in common.

- (2) 1. Abdomen black 1. *pugnatrix*, Marsh.
 (1) 2. Abdomen, after the 1st segment, dull rufotestaceous, the segments indistinctly margined with fuscous 2. *venatrix*, Marsh.

1. *Mesocrina pugnatrix*, Marsh.

M. pugnatrix, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 428, ♀.

♀. Black, shining. Antennæ stout, not quite so long as the body, 28-jointed, the two basal joints testaceous, 3rd joint almost twice as long as the 4th. Mesonotum smooth, very shining; a rather large fovea, oval and rugulose, before the scutellum; metathorax rugose. Wings hyaline with a cinereous tinge; squamula testaceous; nervures and stigma brown, the latter emitting the radial nervure a little beyond the middle; radial areolet short, cultriform, not quite reaching the tip of the wing; 3rd abscissa straight; recurrent nervure interstitial; anal nervure springing from the lower half of the extremity of the 2nd discoidal areolet; pabrachial areolet of the hindwing half as long as the præbrachial. Legs short, stout, especially the femora towards the extremity, testaceous with the apex of the tarsi dusky. Abdomen a little longer than the head and thorax, strongly compressed, linear as viewed from above, oblong-oval as seen sideways, acuminate at the apex; 1st segment linear, almost three times longer than broad, striolate, with medium tubercles; 2nd not wider than the 1st, with two basal foveæ (*gastrocali*); 3rd and following progressively more and more compressed, so as to end acutely at the apex; belly testaceous at the base. Terebra very short, deflected, the valves stout. Length, $1\frac{3}{4}$; wings, $3\frac{1}{2}$ lines.

I captured this insect at Cornworthy, in Devonshire.

2. *Mesocrina venatrix*, Marsh.

M. venatrix, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 428, ♀.

♀. Head and thorax black, very shining. Antennæ slender, somewhat longer than the body, 35-jointed, testaceous, gradually

darkened towards the extremity, all the joints longer than in the preceding species, 3rd one-fourth longer than the following joint. Fovea of the mesonotum linear, impunctate; metathorax shining, hardly marked with a few scattered rugosities. Wings hyaline; squamula pale testaceous; nervures and stigma pale brown, the latter more elongate than in *pugnatrix*, as also is the radial areolet, which more nearly approaches the tip of the wing. Legs whitish-yellow, the tips of the tarsi dusky; femora and tibiæ not remarkably short or stout. Abdomen as in the preceding. Terebra very short, falcate, ascending, the valves slender. Length, $1\frac{1}{2}$; wings, nearly 4 lines.

Taken at Nunton, near Salisbury.

xvii. ORTHOSTIGMA, Ratzeburg.

Ratz., Ichn. d. Forst., i, 53; ii, 71 (1844).

Fourth joint of the antennæ shorter than the 3rd. Mesothoracic sutures effaced; dorsal fovea punctiform; metathorax almost smooth; furrow of the mesopleuræ punctate. Stigma thicker than the metacarp, linear, elongate, reaching to the middle of the radial areolet, emitting the radial nervure near its base; 1st cubital areolet complete, as large as the 1st discoidal; 2nd complete, elongate, slightly contracted towards the outer end; 2nd abscissa twice as long as the 1st intercubital nervure; recurrent nervure short, incomplete, somewhat everted; cubital and anal nervures decolorous, the latter springing from the middle of the extremity of the 2nd discoidal areolet; pabrachial areolet of the hindwing longer than half the præbrachial. Abdomen of the ♀, viewed from above, oval-lanceolate, compressed beneath; that of the ♂ oblong, depressed. Terebra exerted, falcate.

This genus, of which only one species is known, closely resembles the following: the wings present the only tangible difference, yet among small specimens some are to be found with the stigma considerably attenuated, reducing the distinctive character to almost nothing. Förster has remarked of the genus *Orthostigma*, Ratz., that though "obviously belonging to the group of *Alysia*, it cannot be satisfactorily identified from the scanty notices given by Ratzeburg, nor yet from the figure in the Ichn. d. Forstinsecten, Bd. i., pl. vii., fig. 13." I venture to contest this assertion, having no doubt that *Orthostigma* is identical with Förster's own genus *Ischnocarpa*, which is just as imperfectly characterised as that

of Ratzeburg. In choosing between the two authors, neither of whom gives an adequate account of the genus, I have preferred the *Orthostigma* of Ratzeburg, which has priority of time in its favour.

1. *Orthostigma pumila*, Nees.

Alysia pumila, Nees, Mon., i., 251; Hal., Ent. Mag., v., 242, ♂ ♀.

Aphidius flavipes, Ratz., Ichn. d. Forst., i., 52, pl. vii., fig. 13.

Orthostigma flavipes, Ratz., lib. cit., ii., 71.

O. pumila, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii, p. 431, ♂ ♀.

♀. Pitchy black, shining, often with the 1st abdominal segment reddish; mandibles and palpi testaceous. Antennæ moderately stout, as long as the body or rather longer, 17-24-jointed, with two or three of the basal joints testaceous. Metathorax shining, with only a few minute rugosities or (in five examples) entirely smooth; described by Nees as punctulate, by Haliday as rugulose, inaccurately in both cases. Wings hyaline with a slightly obscure tinge, iridescent; squamula testaceous; nervures and stigma brownish or reddish, the latter more attenuated than in the ♂, but varying considerably in thickness. Legs rufo- or flavo-testaceous. First abdominal segment twice as long as its apical width, very little narrowed towards the base, striolate, black, or more or less reddish; the following segments compressed beneath, blackish or piceous. Terebra as long as the two apical segments. ♂ Similar; antennæ longer than the body, 23-24-jointed; stigma stouter, blackish, sometimes almost as broad as the 2nd cubital areolet; legs darker red. Length, $1-1\frac{1}{3}$; wings, $2\frac{1}{4}$ -6 lines.

VAR. Stigma much attenuated, blackish; legs obscure, tibiæ and base of the tarsi paler. Similar to *Aspilota maculipes*, Hal. Length, hardly 1 line. Haliday. This appears to be *O. brunnipes*, Ratz., Ichn. d. Forst., iii., 70, parasite of *Cecidomyia*, and reared in abundance by Brischke.

Common. Obtained in August in 1840 in multitudes, by Ratzeburg, from larvæ of *Phora rufipes*, Meigen. These diptera issued in swarms from a decayed mass consisting of the dead bodies of various caterpillars and pupæ; at the same time appeared great numbers of their parasites.

xviii. *ASPILOTA*, Förster.

Först., Verh. Pr. Rheinl., 1862, p. 268.

Maxillary palpi 6-, labial 4-jointed. Antennæ of the ♀ stout, moniliform, short, with many joints, longer in the ♂; 3rd joint longer than the 4th. Mesothoracic sutures hardly commenced; fovea of the mesonotum minute or obsolete; furrow of the mesopleuræ punctate or crenulate. First cubital areolet small, often confounded with the 2nd, and imperfectly separated from the 1st discoidal owing to the paleness of the transverse nervures; the two intercubital nervures always weaker than the rest, the 1st of them shorter than the 2nd abscissa; stigma almost or altogether obsolete, confounded with the metacarp; often the metacarp, throughout the length of the radial areolet, is a little stouter than the costa, but seldom offers a slight enlargement at the base to indicate the place of the stigma. Abdomen of the ♂ depressed, more or less spatulate or linear; that of the ♀ strongly compressed; viewed in profile, oval or subtriangular; 1st segment linear, hardly smaller at the base, rugulose, elevated; 2nd and 3rd taken together very long; the rest compressed, forming a cariniform edge above; apical segments curved downwards; belly carinate, emitting from its lower posterior angle the terebra, which is falcate, ascending, appearing of various lengths according to its position.

This genus comprises the lowest forms of the Alysiids; they exhibit a general degradation of structure which distinguishes them at once from all the preceding. They are of smaller size, often very minute; the head is differently shaped, less flattened anteriorly, while the part behind the ocelli is more extended; the face is convex, smooth, and obliquely placed, the clypeus broader than in the other Alysiids, convex, somewhat semicircular, truncated anteriorly; mandibles small; thorax short; metathorax sloping from its base, without any regular sculpture. The limits of the stigma (where it can be traced at all) are indeterminate; the radial areolet cultriform, almost always reaching the tip of the wing; recurrent nervure everted; 1st cubital areolet smaller than the 1st discoidal; 2nd intercubital nervure always decolorous; cubital nervure disappearing towards the tip of the wing; anal nervure springing from the middle of the extremity of the 2nd discoidal areolet, and often effaced.

Nearly a dozen species have been indicated or described: their inconstant characters render precise definition extremely difficult, and tabulation almost impossible. Although I suspect that more than one species are sometimes included under the same name, the insufficiency of my collection, containing only 60-70 specimens, prevents me from acquiring certainty on many points. Accident has brought to light some facts relative to one species, *nervosa*, Hal., from which it appears that the varieties mentioned by that author belong almost certainly to several distinct species. The *fuscicornis*, Hal., requires to be elucidated in a similar way, for the capture and examination of isolated examples, of unknown origin, lead to very uncertain results.

Aspilota, Först., represents the *Acarpi* of Haliday (*Alysia*, Sect. XV.), with which I am now induced to incorporate the *Tanychori* (Sect. XVI.), including two so-called species which are in reality identical. Förster invented a new genus, *Synaldis*, for the *Tanychori*; it is founded upon a single artificial character, which of all others is the least reliable, viz., the deficiency of colouring matter in the intercubital nervures, whereby the cubital areoletts appear to be confounded. In examining the species of *Aspilota* it is easily perceived that most of them are liable to this accidental peculiarity, which distinguishes individuals, but is valueless for other divisional purposes. It appears probable that Förster had never seen an example of his genus *Synaldis*, or he would not have transferred it, as he has done in his Synopsis, to the tribe *Dacnusedæ*. In *Synaldis* the tricellular arrangement of the wing-veins is manifest, though imperfectly exhibited; in the *Dacnusedæ* the angles of the radial nervure are rounded off, and there is not the slightest trace of any preparation for the development of three cubital areoletts. In Haliday's opinion the two species of *Tanychori* (*Synaldis*), *concolor* and *distracta*, should be regarded as one, and this will readily be admitted by any one who tries to distinguish them; but I have been obliged to go further, and to conclude that they are nothing more than casually divergent examples of an *Aspilota*.

TABLE OF SPECIES.

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|------|---|---------------------------------|
| (2) | 1. Abdomen red after the 1st segment, which is black; 2nd and following segments cinctured with an obscure band in the ♀; apical segments of the ♂ obscure... .. | 1. <i>ruficornis</i> , Nees. |
| (1) | 2. Abdomen black or blackish; 1st segment sometimes red, and the 2nd rufescent at the extreme base, in one species, <i>curta</i> , the whole body is testaceous, except the head and the apex of the abdomen. | |
| (6) | 3. Third cubital areolet four times as long as the 2nd. | |
| (5) | 4. Antennæ entirely testaceous, 23-jointed in the ♀ (♂ unknown); wings ciliate, with long hairs | 2. <i>fulvicornis</i> , Hal. |
| (4) | 5. Antennæ blackish, with the two basal joints rufescent, 16-17-jointed, ♂ ♀; wings not conspicuously ciliate | 3. <i>compressa</i> , Hal. |
| (3) | 6. Third cubital areolet scarcely twice as long, rarely almost three times as long, as the 2nd. | |
| (8) | 7. Wings whitish or lacteous; cubital nervure suddenly effaced at the end of the 2nd cubital areolet... .. | 4. <i>concinna</i> , Hal. |
| (7) | 8. Wings subhyaline; cubital nervure advancing further than the end of the 2nd cubital areolet. | |
| (20) | 9. First cubital areolet more or less sensibly separated from the 2nd. | |
| (11) | 10. Terebra as long as the abdomen, or almost as long as the body; ♂ doubtful | 5. <i>jaculans</i> , Hal. |
| (10) | 11. Terebra much shorter than the body. | |
| (13) | 12. Radial areolet not quite reaching the tip of the wing | 6. <i>maculipes</i> , Hal. |
| (12) | 13. Radial areolet reaching the tip of the wing. | |
| (15) | 14. Length, $1\frac{1}{2}$ lines; antennæ 27-30-jointed; spiracles of the metathorax visible, margined | 7. <i>præcipua</i> , Marsh. |
| (14) | 15. Much smaller, or very minute; antennæ 13-15-26-jointed; spiracles indistinct, not margined. | |
| (17) | 16. Abdomen more or less reddish at the base, usually the 1st segment and base of the 2nd reddish | 8. <i>fusicornis</i> , Hal. |
| (16) | 17. Abdomen entirely blackish, except in some uncertain varieties. | |
| (19) | 18. Antennæ of the ♀ 18-19-jointed (except in varieties); 22-24-jointed in the ♂ | 9. <i>nervosa</i> , Hal. |
| (18) | 19. Antennæ of the ♀ 15-jointed; ♂ unknown | |
| (9) | 20. First cubital areolet confounded with the 2nd. | 10. <i>insidiatrix</i> , Marsh. |
| (22) | 21. Body testaceous red, with the head and apical segments of the abdomen obscure; radial areolet remote from the tip of the wing | 11. <i>curta</i> , Marsh. |
| (21) | 22. Body black or blackish; 1st abdominal segment sometimes rufescent; radial areolet reaching the tip of the wing... .. | 12. <i>distracta</i> , Nees. |

The above table must be regarded as merely tentative, owing to the absence of several males, and the difficulty of discriminating even the females. The breeding of both

sexes from dipterous larvæ seems the only possible mode of acquiring certainty, and this is not likely to be attempted. Of the twelve species indicated, only six declare themselves with tolerable distinctness, viz., *ruficornis*, *fulvicornis*, *compressa*, *concinna*, *præcipua*, *nervosa*: the rest, with their apparent varieties, are liable, in different degrees, to be suspected.

1. *Aspilota ruficornis*, Nees.

Alysia ruficornis, Nees, Mon., i, 248; Hal., Ent. Mag., v., 244, ♂ ♀.

Asp. ruficornis, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 434, ♂ ♀.

♀. Deep black, shining; abdomen after the 1st segment, rufous; 2nd and following segments cinctured more or less distinctly with a fuscous band. Head dilated behind the eyes; vertex broad; clypeus brown; mandibles tridentate, broad, rufous; palpi rufescent. Antennæ shorter than the body, submoniliform, rather stout, 21–24-jointed, black, with the 6 or 7 basal joints testaceous. Mesothoracic sutures effaced; no discal fovea on the mesonotum; metathorax rugulose, reticulate. Wings hyaline, with a brownish tinge; squamula testaceous; nervures slender, fusco-testaceous; 2nd abscissa four times as long as the 1st; anal nervure effaced before the extremity. Legs rufo-testaceous. Abdomen subpetiolate, much less compressed than in the rest of the species, pyriform; 1st segment one-half longer than broad, narrowed towards the base, finely rugulose, blackish, with the extreme base rufous; belly testaceous. Terebra very short. ♂ usually smaller; antennæ longer than the body, 21–24-jointed; nervulation more distinct; abdomen oblong, depressed; 1st segment almost linear, three times as long as its width; the following segments vary in colour, being sometimes rufous or testaceous with the apical segments black, or almost wholly black with a patch or tinge of rufescence on the disk. Length, $1\frac{1}{2}$ – $1\frac{3}{4}$; wings, $3\frac{1}{2}$ lines.

VAR. ♂. Length, 2 lines; antennæ 19-jointed.

Common in woods, frequenting fungi. Observed by Nees in Franconia and the Sudetsch-Gebirge; I have taken a great number in England.

2. *Aspilota fulvicornis*, Hal.

Alysia fulvicornis, Hal., Ent. Mag., v., 244, ♀.

Asp. fulvicornis, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 435, ♀.

♀. Antennæ wholly rufo-testaceous, 23-jointed; wings ciliate with long hairs. Piceous-black; mandibles rufous. Antennæ stout, as long as the body, submoniliform, pubescent; 3rd joint elongate. Metathorax punctate-rugose. Wings rather narrow, dingy hyaline; squamula rufous; the exterior areolets elongate. Legs rufous. Abdomen piceous-brown, with the base of the 2nd segment somewhat paler. Terebræ very short. ♂ unknown. Length, $1\frac{1}{2}$; wings, 3 lines.

Taken in the north of Ireland, once only, by Haliday.

3. *Aspilota compressa*, Hal.

Alysia compressa, Hal., Ent. Mag., v., 244, ♂ ♀.

Asp. compressa, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 435, ♂ ♀.

♀. Antennæ blackish with the two basal joints rufescent, 16-17-jointed; wings not conspicuously ciliate. Blackish-brown; oral parts rufous. Head deplanate, produced in front below the antennæ; face obliquely placed, almost horizontal. Antennæ hardly longer than the head and thorax. Thorax compressed, only half as wide as the head; no dorsal fovea on the mesonotum. Wings narrow, somewhat dingy hyaline; squamula rufous; exterior areolets elongate. Legs rufous. Abdomen blackish-brown, with the 1st segment rufescent. Terebra very short. ♂. Antennæ about as long as the body, 16-17-jointed; tibiæ sometimes fuscous at the apex. Length, $\frac{2}{3}$ -1; wings, $1\frac{1}{2}$ -2 lines.

Uncommon; taken formerly by Walker in England. It forms the genus *Dipiesta*, Förster.

4. *Aspilota concinna*, Hal.

Alysia concinna, Hal., Ent. Mag., v., 245, ♂ ♀.

Asp. concinna, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 436, ♂ ♀.

♀. Wings albescent or lacteous; cubital nervure abruptly effaced at the end of the 2nd cubital areolet. Deep black, shining. Head much dilated behind the eyes; mandibles

dull rufous. Antennæ stout, black, shorter than the body, 17-18-jointed. Mesothoracic sutures effaced; dorsal fovea represented by a short impressed line before the scutellum; metathorax finely rugulose. Wings with brown nervures and squamulæ; a slight inflation of the costa denotes the base of the stigma; 1st cubital areolet imperfectly separated from the 2nd, and from the 1st discoidal; intercubital nervures, anal nervure, and exterior portion of the cubital, decolorous, the rest of the nervulation very distinct. Legs rufo-testaceous, with the coxæ, and sometimes the femora as well as the apical half of the tibiæ, fuscous, or blackish. First abdominal segment slightly narrowed towards the base, very finely striolate, elevated. Terebra short, exerted. ♂. Antennæ longer than the body, 24-jointed; wings more distinctly white, with blackish nervures; legs blackish, with the tips of the trochanters and base of the tibiæ rufescent. Length, $1\frac{1}{4}$; wings, $2\frac{3}{4}$ lines.

Rare in England and Ireland; I have two specimens found in Wiltshire and Cornwall. It probably forms the genus *Coloboma*, Förster.

5. *Aspilota jaculans*, Hal.

Alysia jaculans, Hal., Ent. Mag., v., 246, ♀.

Asp. jaculans, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 437, ♂ ♀.

♀. Terebra as long as the abdomen, or almost as long as the body. Black, shining; abdomen piceous, with the 1st segment rufescent. Mandibles and palpi rufescent. Antennæ longer than the body, moniliform, rather slender, blackish with the scape rufous, 18-23-jointed. Mesothoracic sutures effaced; an oblong dorsal fovea before the scutellum; metathorax rugulose. Nervures fusco-testaceous; squamula testaceous; radial areolet very elongate; 2nd abscissa almost in the same straight line as the 3rd, hardly forming an angle at the point of junction; 2nd cubital areolet not narrowed towards the outer end. Legs rufous. First abdominal segment sublinear, striolate, rufous, as also is the extreme base of the 2nd. ♂. Antennæ one-half longer than the body, 24-jointed; hind tibiæ fuscous towards the tips; 1st abdominal segment narrower, dull reddish. Otherwise like the ♀, especially in the nervulation; yet I have no proof that the sexes are rightly paired. Length, $\frac{3}{4}$; wings, 2 lines.

Taken rarely in North Ireland by Haliday; by me in

Wales, Wiltshire, and Devonshire, six specimens, of which one is a ♀, distinguished by the length of the terebra.

6. *Aspilota maculipes*, Hal.

Alysia maculipes, Hal., Ent. Mag., v., 246, ♀.

Asp. maculipes, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 438, ♀.

♀. Radial areolet not quite reaching the tip of the wing. Similar to *A. fuscicornis* (sp. 8). Deep black. Antennæ short, stout, 15-18-jointed. Fovea of the mesonotum punctiform. Wings hyaline; squamula brownish; nervures distinct, blackish. Legs obscure, with the apex of the trochanters and base of the tibiæ and tarsi pale. Terebra exerted, shorter than the abdomen. Length, hardly 1; wings, 2 lines.

Not known to me: the diagnosis is from Haliday, who appends the following note. Some specimens of this insect, with the metacarp rather stouter and black, do not differ much from *concinna* (sp. 4); others agree more nearly with *Orthostigma pumila*, Nees (var. already described). But many species of Section XV. (*Aspilota*) are dubious, and may possibly prove to be mere varieties.

Found in England by Walker, and less commonly in Ireland by Haliday.

7. *Aspilota præcipua*, Marsh.

Aspilota præcipua, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 439, ♂ ♀.

♀. Largest of the genus, almost 2 lines long; antennæ 27-29-jointed; spiracles of the metathorax conspicuous, margined. Black, shining; 2nd abdominal segment sometimes obscurely rufescent at the base; mandibles and palpi rufous. Antennæ longer than the body, submoniliform, black, with the scape or the two basal joints rufous. Mesothoracic sutures effaced; dorsal fovea sulciform; metathorax rugose at the sides, having two oval smooth spaces in the middle, divided more or less distinctly by a rugose band. Wings hyaline; squamula and nervures fuscous; 2nd abscissa twice as long as the 1st; 2nd cubital areolet short, not narrowed towards the outer end; 1st intercubital nervure much

attenuated, sometimes effaced; 1st cubital areolet imperfectly separated from the 1st discoidal; 3rd abscissa straight; pobrachial areolet of the hindwings rather longer than half the præbrachial. Legs rufous; tips of the hind tibæ often obscure. First abdominal segment twice as long as its apical width, irregularly striolate. Terebra as long as the vertical truncature of the abdomen at its extremity. ♂ Similar; antennæ 30-jointed. Length, $1\frac{3}{4}$; wings, 4 lines.

VAR. ♀. Antennæ somewhat shorter, as long as the body, only 25-jointed, the two basal joints rufous, and the flagellum obscurely rufescent, blackish towards the extremity. Differs from *fulvicornis* (sp. 2) in that the 3rd cubital areolet is not four times as long as the 2nd.

This probably constitutes the genus *Dinotrema*, Förster, characterised as having the "Luftlöcher des Metathorax mittelgross, deutlich." It is too common an insect to have escaped the notice of Haliday, and seems to be included among the varieties of sp. 56 (Ent. Mag., v., 245) without a name, but afterwards called *nervosa* (sp. 9, *infra*). This latter differs constantly in being much smaller, with stouter antennæ, shorter than the body, and having fewer articulations, etc. I have seen hundreds of the real *nervosa*, bred all together, and am therefore somewhat familiar with its appearance. *A. præcipua* is generally distributed, but less abundant than *nervosa*.

8. *Aspilota fuscicornis*, Hal.

Alysia fuscicornis, Hal., Ent. Mag., v., 246, ♀.

Asp. fuscicornis, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 440, ♂ ♀.

♀. Black or piceous-brown, shining; mandibles rufous. Antennæ 15-19-jointed (according to Haliday also 13-jointed), fuscous with the 3 basal joints rufous, hardly shorter than the body. Dorsal fovea of the mesonotum punctiform, often obsolete; metathorax very finely rugulose. Wings much longer than the abdomen, hyaline; squamula testaceous; nervures very pale brownish; 1st cubital areolet separated from the 2nd, and from the 1st discoidal; 2nd cubital areolet elongate, narrow, slightly contracted towards the outer end; radial areolet longer than half the wing. Legs testaceous. First abdominal segment almost linear,

or very little enlarged posteriorly, minutely striolate, rufous, rufescent, or nearly black; 2nd rufescent at the base. Terebra exerted, much shorter than the abdomen. ♂ Similar; antennæ 17-jointed in my specimen. Length, $\frac{2}{3}$; wings, $1\frac{1}{2}$ lines.

VAR. Rufo-castaneous, with the head and tip of the abdomen blackish. Haliday.

At present I refer to *fuscicornis*, all specimens of minute size having the base of the abdomen rufous, and few joints in the antennæ. Nevertheless, doubtful individuals occur, and the species is far from being well established. Common in England, Ireland, and Scotland.

9. *Aspilota nervosa*, Hal.

Alysia (sp. 56,) Hal., Ent. Mag., v., 245 (*partim*),
♂ ♀.

Alysia nervosa, Hal., Hym. Brit., ii., 25.

Asp. nervosa, Marsh., Species des Hym. d'Eur. et
d'Alg., Bracon., vol. ii., p. 441, ♂ ♀.

♀. Black, shining; mandibles rufous; palpi obscure; clypeus very short, black, separated from the face by a deep furrow; face prominent, convex, smooth. Antennæ shorter than the body, stout, slightly thickened in the middle, 18-19-jointed. Mesothoracic sutures effaced; dorsal fovea punctiform; metathorax dull, punctate-rugulose, sometimes with two small shining areæ close to the base. Wings hyaline; squamula pale brownish; nervures distinct, fuscous, arranged as in the preceding species; 1st cubital areolet always separated from the 2nd, and from the 1st discoidal. Legs rufous; hind coxæ sometimes partially obscure, as well as the femora and tibiæ of the same pair. Abdomen and terebra as in *fuscicornis*. ♂ Similar; antennæ wholly black, longer than the body, 22-24-jointed; legs rufescent with the base of the hind coxæ obscure, femora more or less fuscous, often with a fuscous streak above; tibiæ and tarsi fuscous at the apex. Length, $1-1\frac{1}{4}$; wings, $2\frac{1}{2}-3\frac{1}{2}$ lines.

The limits of size given by Haliday sufficiently indicate that his description includes more than one species. But as some definite type must be selected, if a description is to have any meaning, I have chosen that which I believe to be the commonest. The specimens which furnished the above description were all homogeneous,

forming part of a great number reared under circumstances favourable to observation. They were parasites of an extremely abundant fly, *Homalomyia canicularis*, L. Mr. Bignell, a year or two ago, kept in a glass case a nest of *Vespa vulgaris*, L., full of dead wasps in various stages of growth. From their decaying bodies issued day after day some hundreds of the *Homalomyia*, accompanied by a proportionate multitude of the parasites. These latter, being so numerous, might have been expected to exhibit at least some of the varieties conjecturally assigned to *nervosa*, but I was unable to find any deviation from the form here adopted. This seems to justify the assumption that slight differences in the antennæ, wings, etc., denote specific distinction, and ought not to be vaguely attributed to individual variation. The following are divergent forms which I have taken at different times, and which I am no longer able to regard as varieties of *nervosa*, though much more evidence would be required in order to establish them as good species:—

1. ♀ Length, $\frac{3}{4}$ line. Antennæ slender, moniliform, as long as the body, 17-jointed; nervures pale testaceous; 1st cubital areolet imperfectly defined; legs testaceous. A second example has the 1st cubital areolet plainly confounded with the 2nd, the femora and tips of the tibiæ fuscous.
2. ♀ Length, 1 line. Antennæ very stout, moniliform, as long as the body, 18-jointed; nervures pale; 1st cubital areolet closed; 2nd abdominal segment rufous at the base.
3. ♀ Length, $\frac{3}{4}$ line. Antennæ slender, moniliform, longer than the body, 18-jointed; otherwise like No. 2.
4. ♀ Length, $\frac{3}{4}$ line. Antennæ as in No. 3, but 19-jointed; nervures very pale; 1st cubital areolet incomplete; radial areolet very long; 1st abdominal segment rufescent.
5. ♀ Length, 1 line. Like No. 4, but with 22-jointed antennæ.
6. ♂ Length, $\frac{1}{2}$ line. Antennæ slender, filiform, longer than the body, 19-jointed; wings with a dusky tint, nervures distinct, fuscous; 1st cubital areolet closed; 2nd elongate, very narrow.
7. ♀ Length, 1 line. Antennæ slender, moniliform, longer than the body, 20-jointed; nervures pale; 1st cubital areolet closed; 2nd moderately long.
8. ♀ Length, 1 line. Antennæ rather stout, moniliform, longer than the body, 21-jointed, testaceous at the base; nervures pale; 1st cubital areolet confounded with the 2nd; abdomen rufo-castaneous with the 1st segment clear rufous, smooth and shining.
9. ♀ Length, $1\frac{1}{4}$ line. Antennæ slender, longer than the body, 23-jointed, the scape rufous; a punctiform fovea on the mesonotum; nervures pale; 1st cubital areolet confounded with the 2nd and imperfectly separated from the 1st discoidal; 1st segment rufous, blackish at the apex; 2nd rufous at the base.
10. ♂ ♀ Like *nervosa*, but the antennæ of the ♀ are slender, longer than the body and 24-jointed; those of the ♂ relatively longer, 25-jointed; femora sometimes streaked with black above.

10. *Aspilota insidiatrix*, Marsh.

Asp. insidiatrix, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 444, ♀.

♀. Short, stout, black, shining; abdomen piceous-brown; mandibles rufous; palpi obscure. Antennæ scarcely as long as the body, incrossated towards the apex, 15-jointed, the 2nd joint rufous. Mesothoracic sutures effaced; dorsal fovea shallow, oblong; metathorax dull, coriaceous. Wings hyaline; squamula and nervures fusco-testaceous; 1st intercubital nervure decolorous; 1st cubital areolet imperfectly separated from the 1st discoidal; 2nd short; 2nd abscissa only twice as long as the 1st intercubital nervure; radial areolet reaching the tip of the wing. Legs dull testaceous, femora and tibiæ brownish towards the extremity. Abdomen only slightly compressed, pyriform; 1st segment very short, much widened behind, shining, hardly striolate. Terebra short, exerted. ♂ unknown. Length, $\frac{3}{4}$; wings, $1\frac{3}{4}$ lines.

This comes nearest to *maculipes* (sp. 6), but differs in having the radial areolet extended to the tip of the wing. I have taken only a single example.

11. *Aspilota curta*, Marsh.

Asp. curta, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 444, ♀.

♀. Minute, short, stout, shining, rufous, with the head and terminal segments of the abdomen fuscous. Head very large. Antennæ as long as the body, dull rufous, 15-jointed. Mesonotum without a dorsal fovea; metathorax very short, coriaceous. Nervures and squamula testaceous; radial areolet remote from the tip of the wing; 1st cubital areolet confounded with the 2nd, and with the 1st discoidal. Legs stout, rufous. First abdominal segment short, stout, dull, coriaceous, not widened posteriorly. Terebra short, exerted. ♂ unknown. Length, $\frac{1}{3}$; wings, hardly 1 line.

This resembles *Alysia castanea*, Nees (Mon., i., 250), as well as Haliday's variety of *fuscicornis* (sp. 8), which is not described; he says nothing of the radial areolet, which terminates at an appreciable distance from the tip of the wing; the colour is of secondary importance, as it may be due simply to immaturity; the insect differs from the true *fuscicornis* in many small particulars. I have taken only one specimen.

12. *Aspilota distracta*, Nees.

Alysia distracta, Nees, Mon., i., 255; Hal., Ent. Mag., v., 247, ♂ ♀.

Bassus concolor, Nees, Mag. Ges. Berl., vi., 213.

Alysia concolor, Nees, Mon., i., 254; Hal., Ent. Mag., v., 247, ♂ ♀.

Asp. distracta, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 445, ♂ ♀.

♀. Black or piceous; sometimes with the 1st abdominal segment rufous; smooth, shining, mandibles and palpi rufescent. Antennæ shorter than the body, 13-18-jointed. Fovea of the mesonotum punctiform or obsolete; furrow of the mesopleuræ crenulate, or indicated by a row of punctures; metathorax more or less rugulose, smooth on the sides. Wings hyaline; squamula and nervures brownish testaceous; 1st cubital areolet confounded with the 2nd, and with the 1st discoidal; 3rd abscissa straight, or with a scarcely perceptible curve; radial areolet reaching the tip of the wing. Legs either rufous, or fuscous with the tips of the trochanters and base of the tibiæ rufous. Abdomen strongly compressed; 1st segment almost linear, hardly striolate. Terebra shorter than the abdomen. ♂ Similar; antennæ much longer than the body, 21-23-jointed. Length, $\frac{2}{3}$ -1 $\frac{1}{2}$; wings, 1 $\frac{1}{3}$ -2 $\frac{2}{3}$ lines.

VAR. ♂. Antennæ 23-jointed; nervures fuscous, distinct; 2nd cubital areolet much contracted towards the outer end; 1st cubital areolet separated from the 1st discoidal; 1st abscissa very oblique, forming part of the same curve as the 2nd, with hardly any distinct angle; the 2nd angle of the radial nervure is also very obtuse. Length, $\frac{2}{3}$ line. Probably a different species.

I possess 1 ♀, 5 ♂s answering the descriptions of Nees and Haliday: only one ♂ attains the larger size given above; the others are smaller, like those described by Nees. I cannot find any difference between *distracta* and *concolor*, except the colour of the legs. Haliday gives with *distracta* a var. β having the colours of *curta* (sp. 11), and not unlikely to be the same; yet the difference of the wings is a serious objection, see Haliday's plate (Ent. Mag., v., pl. xvii., fig. 26), in which the radial areolet of one of these insects reaches the tip of the wing. I suspect the present species of being merely factitious; if we had more knowledge, it would

probably resolve itself into one or more of those above described, some of which are themselves uncertain. *Alysia brevicornis*, Nees (Mon., i., 249), belongs to *Aspilota*, but cannot now be identified; the characters assigned to it are merely generic.

XXV. DACNUSIDES.

Setting aside a few aberrant genera, these insects differ very little from the Alysiides, of which they are the inferior forms, possessing only two cubital areolet. This character, however, is obvious and admits of precise definition. In many of the preceding tribe the cubital areolet appear confounded, but this is through the absence of colouring matter in the dividing nervures, which may always be traced, at least ideally. In *Dacnusa* and its affinities this is not the case: the radial nervure shows only two abscissas, *i.e.*, after passing the first abscissa, it is directed in an unbroken curve to the tip of the wing, forming no second angle. The radial areolet is lanceolate, seldom cultriform (*Liposcia*), and mostly too short to reach the tip of the wing; stigma variable, oval more or less lanceolate, linear and attenuated in different degrees, or lastly obsolete, being confounded with the metacarp (*Gyrocamp*); 1st cubital areolet separated from the 1st discoidal, except in *Dacnusa aphant*; cubital and anal nervures more or less effaced towards the extremity. Abdomen usually subsessile, rarely as broad at the base as the metathorax (*Polemon*); often compressed in the ♀ (*Chænon*, *Cælinius*, *Polemon*); 1st segment rugulose or striolate, the rest generally smooth, but sometimes with a little rugosity on the 2nd segment; rarely with more of the segments rugulose (*Ænone*, *Polemon*). Terebra very short or concealed; rarely as long as half the abdomen.

There are no apterous females, if the *Chænon apterus*, Curtis, be rightly considered as a synonym of *Chasmodon* (*Alysiides*, Gen. i., *ante*). At the same time it must be observed that, in default of wings, *Chasmodon* might with equal propriety be referred to the present tribe.

The *Dacnusides* have naturally the same habits as the *Alysiides*, being parasites of Diptera; observations have shown that even the minute flies whose larvæ live in the

parenchyma of leaves, are not exempt from their attacks.

TABLE OF GENERA.

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|------|---|-------------------------|
| (2) | 1. Postscutellum armed with a dentiform spine; three first abdominal segments very broad, rugose, forming a carapace like that of <i>Sigalphus</i> , beneath which the following segments are wholly or in great part retracted; general form robust | i. <i>ÆNONE</i> . |
| (1) | 2. Postscutellum unarmed; abdominal segments normally disposed, smooth, except the first, or sometimes the two first. | |
| (4) | 3. First abdominal segment broader than long; 2nd suture in form of a finely impressed curved line; body robust, as in <i>Ænone</i> ... | ii. <i>EPIMICTA</i> . |
| (3) | 4. First abdominal segment longer than broad; 2nd suture straight, nearly or quite effaced; form of <i>Alysia</i> , not remarkably robust. | |
| (14) | 5. Body neither linear nor very elongate; abdomen oblong-oval or suborbicular, not or scarcely longer than the head and thorax. | |
| (7) | 6. Stigma elongate, linear, consisting of an empty membranous sack, having a drop or spot of colouring matter only at the base, otherwise decolorous; radial areolet ample, subcultriform, almost reaching the tip of the wing ... | iii. <i>LIPOSCIA</i> . |
| (6) | 7. Stigma of various form, filled up with colouring matter, sometimes obsolete and confounded with the metacarp; radial areolet much smaller, lanceolate, remote from the tip of the wing. | |
| (9) | 8. Second abscissa of the radial nervure describing an irregular curve, usually sinuated or concave on the under side, and always somewhat straightened towards the tip, whereby the radial areolet becomes more or less acuminate | iv. <i>DACNUSA</i> . |
| (8) | 9. Second abscissa describing a regular parabolic arc, neither sinuated beneath, nor straightened towards the tip. | |
| (11) | 10. Eyes naked; thorax smooth; stigma very long, linear, attenuated | v. <i>GYROCAMPA</i> . |
| (10) | 11. Eyes hairy; thorax punctulate; stigma less elongate, or sometimes short, oval-lanceolate. | |
| (13) | 12. Stigma less elongate than in <i>Gyrocampa</i> , emitting the radial nervure before the middle; labial palpi 3-jointed | vi. <i>CHOREBUS</i> . |
| (12) | 13. Stigma short, oval-lanceolate, emitting the radial nervure from its middle; labial palpi 4-jointed | vii. <i>CHÆNUSA</i> . |
| (5) | 14. Body linear, elongate; abdomen longer than the head and thorax. | |
| (16) | 15. Second abscissa describing a regular curve, not sinuated | viii. <i>CÆLINIUS</i> . |
| (15) | 16. Second abscissa sensibly sinuated before the extremity. | |
| (18) | 17. Abdomen subsessile, 1st segment much narrower than the metathorax; abdomen of the ♀ strongly compressed, like the blade of an oar, from the base of the 3rd segment ... | ix. <i>CHÆNON</i> . |
| (17) | 18. Abdomen sessile, 1st segment almost as broad as the metathorax; abdomen of the ♀ feebly compressed, at the apex only | x. <i>POLEMON</i> . |

The two first genera are distinct and natural, although *Epimicta* contains only a single species; the eight following are more artificial, but as they seem likely to facilitate the determination of species, I have allowed them to remain. They may be distributed into three natural groups; 1. *Dacnusa* (G. iii., iv.); 2. *Gyrocampa* (G. v., vi., vii.); and 3. *Cœlinius* (G. viii., ix., x.). *Gyrocampa*, *Chorebus*, and *Chænusa* are very closely allied both in form and habits; *Chænon* and *Cœlinius* are in all essential particulars the same, and may be optionally regarded as synonyms, which indeed they originally were. Förster has much increased the number of generic names by commencing the dismemberment of the great genus *Dacnusa*, but he has left untouched the majority of the species.

i. *ÆNONE*, *Haliday*.

Hal., Hym. Brit., ii, 3 (1839).

Head broad, transverse; front very short; eyes naked; clypeus somewhat semicircular, or obtusely triangular; mandibles quadridentate, the 2nd tooth the longest, the 4th the smallest; maxillary palpi 6-, labial 4-jointed. Postscutellum armed with a dentiform spine. Stigma oval-lanceolate, more or less short, emitting the radial nervure from the middle, or from just before the middle; radial areolet lanceolate, remote from the tip of the wing; recurrent nervure slightly rejected. Abdomen subsessile, oval, as broad as the thorax, entirely or in great part covered with longitudinal striæ; segments 2-3 indiscrete, forming with the 1st a sort of carapace which conceals all the following segments, or these if visible are extremely short; belly concave; terebra concealed. The length of the antennæ is the readiest means of distinguishing the sexes.

Nees von Esenbeck was acquainted with two species, which he formed into a section of *Sigalphus*; their resemblance to that genus is very striking, but the structure of the mandibles shows them to belong to the Exodontes. Förster changed the name *Ænone* to *Symphya*, but without stating his reasons for so doing; *Ænone* occurs as a specific name in Lepidoptera, but I cannot find any instance of a genus so called. Dahlbom, in his Monograph of *Chelonus* (Sv. Ak. Handl., 1833, p. 159), described a species *pullatus*, having only two

cubital areolets, and which therefore seems, at first sight, to belong to the present genus, but the figure of the wing given by the same author shows that this can hardly be correct, and the insect remains to be rediscovered by the Swedish entomologists. The habits of the species of *Enone* are unknown; I have generally obtained them by beating trees, especially oaks and willows.

TABLE OF SPECIES.

- (2) 1. Abdominal carapace smooth after the 2nd segment; posterior segments exerted, very short 1. *hians*, Nees.
 (1) 2. Abdominal carapace wholly striolate; posterior segments retracted.
 (4) 3. Antennæ 27-29-jointed; scutellum coarsely rugose, dull; stigma short, emitting the radial nervure from its middle ... 2. *mandibularis*, Nees.
 (3) 4. Antennæ 36-38-jointed; scutellum punctate, rather shining; stigma longer, emitting the radial nervure before the middle ... 3. *ringens*, Hal.

1. *Enone hians*, Nees.

Sigalphus hians, Nees, Mag. Ges. Berl., 1816, p. 253; Mon., i., 273, ♂ ♀.

Æ. hians, Hal., Hym. Brit., ii., 4; Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 452, ♂ ♀.

♀. Black, thinly covered with pale pubescence. Head smooth, shining; face punctulate, somewhat dull, pubescent; mandibles dark brown; clypeus nearly black; palpi testaceous. Antennæ setiform, scarcely as long as the body, 34-35-jointed. Mesonotum punctulate, trisulcate longitudinally, the furrows punctate, the median anteriorly effaced, the two lateral converging towards an angle before the scutellum; scutellum punctulate; postscutellum armed with an acute spine; metathorax rugose, reticulate, indistinctly channeled in the middle, with two tubercles on each side at the extremity; mesopleuræ smooth, with a broad rugose furrow; mesosternum punctulate. Wings hyaline; squamulæ testaceous; nervures and stigma blackish; nervures of the hindwings testaceous, effaced towards the extremity. Legs testaceous, tarsi, and tips of hind tibiæ, fuscous; hind coxæ sometimes blackish at the base. Abdomen narrowed at the base, oboval, spatulate, slightly convex above; 1st segment widened behind, and with a bifurcate carina at the base; 2nd finely striolate; 3rd and following smooth; the 2nd suture, which limits the striolate portion of the abdomen, generally effaced or nearly so; posterior segments exerted, but very short. ♂ Similar; antennæ rather longer than the body,

34-35-jointed; abdomen narrower, subconical towards the apex; posterior segments more conspicuously exerted. Length, $1\frac{3}{4}$ -2; wings, $3\frac{1}{2}$ -4 lines.

Not uncommon; it has been taken in Germany, Holland, Russia, England, and Ireland. Haliday captured his specimens in osier-beds, and mine were found in similar situations.

2. *Ænone mandibularis*, Nees.

Sigalphus mandibularis, Nees, Mag. Ges. Berl., 1816, p. 254; Mon., i., 274, ♀.

Æ. mandibularis, Hal., Hym. Brit., ii., 4, ♀; Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 453, ♂ ♀.

♀. Deep black, thinly covered with pale pubescence. Head smooth; vertex and cheeks pubescent; front and face rugulose, the latter more finely, and covered with pubescence; mandibles and clypeus black; palpi fusco-testaceous. Antennæ widely separated at the base, shorter than the body, submoniliform, hardly attenuated at the apex, 27-29-jointed, black, with the 2nd joint testaceous. Mesonotum punctate-rugose, smoother at the sides, trisulcate, all the furrows united posteriorly; scutellum and metathorax rugose, reticulate; spine of the postscutellum blunt, compressed; metathorax not carinate in the middle; mesopleuræ and sternum rugose; beneath the wings on each side is a smooth space. Wings infumated; squamulæ brownish; stigma and nervures blackish; the former oval-lanceolate, shorter than in the following species, emitting the radial nervure from the middle. Fore legs testaceous; the middle pair dull testaceous with the femora black above and the apex of the tarsi blackish; hind legs blackish, trochanters wholly or in part, together with the base of the tibiæ, reddish; all the coxæ black; sometimes the legs are entirely testaceous. Abdomen occasionally brown, oboval, slightly convex, rather deeply striate and beset with whitish hairs on the first three segments, which conceal all the following; 1st segment short, ascending; 2nd suture effaced. ♂ Similar; antennæ longer than the body, 29-jointed. Length, $1\frac{1}{2}$ - $1\frac{3}{4}$; wings, 3- $4\frac{1}{2}$ lines.

Taken in Germany, England, and Ireland. My specimens were beaten out of oak trees.

3. *Enone ringens*, Hal.

Enone ringens, Hal., Hym. Brit., ii., 4, ♀; Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 454, ♂ ♀.

Resembles *hians*, from which it may be distinguished in few words. Palpi obscure. Antennæ ♂ ♀, 36-38-jointed. Mesonotum more coarsely punctured, the medial furrow dilated anteriorly instead of being effaced; spine of the postscutellum shorter and stouter; scutellum punctate, somewhat shining. Wings infumated; squamulæ brownish; stigma and nervures blackish; the former is longer than in the two other species, emitting the radial nervure before the middle; nervures of the hindwings blackish. Legs dull rufous; coxæ, base of trochanters, tarsi, and tips of hind tibiæ, blackish. The striæ on the carapace are fine like those of *hians*, and continued to the extremity like those of *mandibularis*; 4th and following segments concealed. Length, 2; wings, $3\frac{1}{2}$ -4 lines.

Rare in Ireland, according to Haliday; in England it is commoner than the other species, and I have frequently found it on willows.

ii. EPIMICTA, Förster.

Först., Verh. Pr. Rheinl., 1862, p. 274.

Body robust, convex, in great part smooth. Head and its appendages as in *Enone*. Mesothoracic furrows deeply impressed, complete, crenulate; an impressed line starting from the anterior margin, between the two furrows, becomes dilated before the scutellum into an oval crenate fovea; postscutellum unarmed; furrow of the mesopleuræ broad, punctate-rugose, like the rest of the pleuræ; mesosternum smooth; metathorax very short, rugose. Stigma linear-lanceolate, emitting the radial nervure just before the middle; radial areolet lanceolate, acuminate, not reaching the tip of the wing; radial nervure almost insensibly sinuated near the extremity. Abdomen oval, convex, as wide as the thorax and a little longer, showing 7 segments above in the ♂, 6 in the ♀, the 2nd and 3rd united by coalescence, not reaching the middle of the abdomen; 1st very short, transverse, ascending, rugose; 2nd minutely striolate, often almost smooth; 2nd suture scarcely visible; 3rd and following segments smooth; 4th a little longer than the 3rd; 5th as long as the 4th; 6th somewhat shorter and diminishing in breadth; 7th hardly exerted in the ♂, concealed in the ♀. Terebra concealed.

This genus, hitherto undescribed as such, was originally joined to *Ænone* by Curtis; it differs, however, widely in the conformation of the abdomen. Haliday placed it at the head of his genus *Dacnusa*, but in a separate section; although most of the technical details in *Epimicta* and *Dacnusa* are similar, yet the important characters of the abdomen, together with the very different facies caused by the stout form and robustness of the body, sufficiently distinguish the former genus. In Förster's table it is stated that the second abdominal segment is marked with a transverse furrow; this is derived from Haliday, who often speaks of segments 2-3 (soldered together in the Braconidæ) as the second segment; the expression is not quite correct, as in the present instance, where the transverse furrow in question is nothing else than the second suture. There is only one known species, which cannot be confounded with any other of the *Dacnusidæ*.

1. *Epimicta marginalis*, Hal.

Dacnusa marginalis, Hal., Hym. Brit., ii., 6, ♂ ♀.

E. marginalis, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 456, ♂ ♀.

♀. Black, with the apex of the abdomen rufous or testaceous, the posterior segments narrowly bordered with the same colour. Vertex very short; face indistinctly carinate, punctulate; clypeus, mandibles, and palpi testaceous. Antennæ a little longer than the body, submoniliform, brownish or reddish testaceous, 37-38-jointed. Wings slightly infumated; squamulæ, stigma, and nervures brownish, sometimes very pale; recurrent nervure hardly rejected. Legs testaceous; base of the hind coxæ, tarsi of the same pair, and tips of the other tarsi, fuscous. Abdomen beset with whitish hairs; segments 3-5 margined with testaceous; 6th testaceous with an obscure dorsal patch; belly concave, testaceous. Valves of the terebra incrassated, concealed. ♂ Similar; 6th segment without an obscure patch; 7th exserted, testaceous. Length, 2; wings, 4 lines.

Rare in England, and not yet noticed in any other country. I have taken three specimens, in Leicestershire, Wiltshire, and Cornwall.

iii. LIPOSCIA, Förster.

Först., Verh. Pr. Rheinl., 1862, p. 276.

Form and characters of *Dacnusa*, except as to the wings. Head transverse; maxillary palpi 6-, labial 4-jointed. Mesothoracic furrows complete, but faintly traced, with an additional medial channel; metathorax short, pubescent. Wings narrow from the base as far as the stigma, enlarged and rounded posteriorly; basal areolets very short; radial ample, cultriform, reaching the tip of the wing; 2nd abscissa not exactly straight; stigma linear-lanceolate, as long as two-thirds of the radial areolet, confounded at the extremity with the metacarp; it resembles an elongate bladder, pale and empty, except a small oval mass of colouring matter collected at the base; recurrent nervure rejected; radial and anal nervures faintly traced; nervures of the hindwings nearly effaced. I possess only the ♂, which has the abdomen oval, somewhat depressed, broader than the thorax; 1st segment narrow, linear, twice as long as its width, with distinct spiracular tubercles. The singularity of the stigma is not accidental, as one would be inclined to suppose; Förster states that all his specimens, of both sexes, were similar in this respect.

1. *Liposcia discolor* (Först.), Marsh.

L. discolor, Marsh., Species des Hym. d'Eur. et d'Alg., Bracon., vol. ii., p. 457, ♂.

♂ Black; abdomen piceous after the 1st segment; 2nd segment rather lighter than the following. Head smooth, shining; mandibles quadridentate with very small equal teeth, testaceous; palpi testaceous. Antennæ slender, much longer than the body, blackish with the scape piceous, filiform, composed of 28 cylindrical joints; 1st joint elongate, the terminal joint longer than broad. Middle lobe of the mesonotum very shining, the two lateral somewhat dull; scutellum, metathorax, and 1st abdominal segment beset with whitish hairs; metathorax dull, coriaceous, without a medial carina. Wings hyaline; squamulæ testaceous; radial, intercubital, and cubital nervures pale, indistinct; anal nervure effaced; nervures of the basal portion of the wing brown, together with the coloured spot of the stigma, the empty part of which is pale yellowish. Legs testaceous; tarsi fuscous at the apex. First abdominal segment striolate, the rest smooth and glabrous; 2nd suture almost effaced; segments 2-3 together shorter than all the following; 4th as long as the 3rd, the rest progressively decreasing in length to the extremity. Length, 1; wings, $2\frac{1}{4}$ lines.

I captured a single specimen last year in Cornwall.

iv. DACNUSA, *Haliday*.

Hal., Hym. Brit., ii., 5 (1839).

Body short or moderately elongate ; general form like that of the Alysids, especially of the genus *Adelura*. Head transverse, rarely as long as it is broad (*D. gilvipes*) ; mandibles quadridentate ; maxillary palpi 6-, labial 4-jointed. Antennæ generally setaceous, multiarticulate, as long as the body or longer, often more than twice as long ; short and pauciarticulate in the ♀ of *D. ampliator*. Mesothoracic furrows usually incomplete, or hardly inchoate ; between them is a medial channel more or less distinct and of variable length, ending in a fovea before the scutellum ; metathorax short, rugulose, often imperfectly carinate at the base. Stigma elongate, linear, of variable thickness, emitting the radial nervure before the middle ; 1st abscissa distinct, but exceptionally cut off by the stigma in *D. adducta* ; radial areolet semi-oval, lanceolate, acuminate ; radial nervure forming an irregular curve, sinuated near the middle, and straightened towards the extremity, the sinuation is sometimes barely visible (*D. semirugosa*, etc.), the straightening is constantly present ; recurrent nervure in most cases rejected, *i.e.*, pointing to the lower angle of the 1st cubital areolet ; but in *D. abdita*, and two or three more species it is interstitial, *i.e.*, pointing to the lower interior angle of the 2nd. Abdomen subsessile, rarely subpetiolate, oblong-oval or suborbiculate, sometimes spatulate, not or hardly longer than the head and thorax ; all the segments smooth except the 1st, and rarely the 2nd (*D. semirugosa*, etc.) ; 1st segment longer than broad ; segments 2-3 united by coalition, and longer than all the following taken together. Terebra short, almost concealed, rarely somewhat exserted (*D. areolaris*), or even as long as $\frac{1}{2}$ or $\frac{3}{4}$ of the abdomen (*D. clandestina* and *stramineipes*).

This genus is numerous in species, but they have been so neglected by hymenopterists that any attempt to give an account of them must necessarily be unsatisfactory. The earliest notice of them was published by Nees von Esenbeck in the "Berliner Magazin" for 1814 : he described three or four species under the generic name of *Bassus*. These he afterwards, in his Monograph (1834), transferred to the genus *Alysia*, as a 5th section, with additions, raising the number to 12, not all of which can now be recognized. The only other publication of value on the subject of these insects is Haliday's tract dated 1839, under the title "Hymenoptera Britannica : Alysia,

Fasciculus alter," which is now difficult to procure. It contains 21 species belonging to our Fauna, and must form the groundwork of any future treatises on the subject. Haliday's labours were succeeded by a blank period of fifty-five years, during which only five scattered notices of *Dacnusa* appeared, these occur in the works of Ratzeburg, Goureau, and Vollenhoven, but four of them are insufficient for specific determinations. My own observations, however desultory and imperfect, have succeeded in increasing the number of known species to about 40, several of which are not indigenous; it would not be difficult, with more time, greatly to augment this number. My captures on the continent have been very few, and boxes of Braconidæ received from correspondents hardly ever contain a *Dacnusa*, or if any occur, they are usually unset, and their examination and description consequently impracticable, except in a few cases. It is merely a waste of time to collect specimens of this sort without displaying the wings, etc.—they are too small and too stubborn to be relaxed, and can only be rejected as useless.

Förster's Synopsis contains 14 so-called genera, cutting off as many species of *Dacnusa*, and the same process might have been applied to the rest, so as totally to disintegrate the genus. I have not adopted these divisions, which only multiply difficulties, for it is easier to identify an insect directly by its specific diagnosis than to trace it through an artificial genus resting on the same characters, and often only obscurely indicated.

Following out the plan of these papers, I have endeavoured to tabulate the species, but the task is so difficult as to border upon the impossible. The following attempt therefore will not, perhaps, stand much criticism, yet it may give some slight assistance in the investigation of many species.

TABLE OF SPECIES.

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|------|--|-----|-----|--------------------------|
| (2) | 1. First cubital areolet contiguous to the stigma which cuts off the 1st abscissa | ... | ... | 1. <i>adducta</i> , Hal. |
| (1) | 2. First cubital areolet separated from the stigma by the 1st abscissa. | | | |
| (52) | 3. Recurrent nervure pointing to the lower angle of the 1st cubital areolet. | | | |
| (11) | 4. Second abdominal segment rugulose or aciculate, sometimes only at the extreme base (<i>talaris</i>); exceptionally smooth in a variety of that species. | | | |

- (6) 5. Abdomen rufous with the 1st segment blackish and the 2nd piceous; radial areolet almost reaching the tip of the wing ... 2. *phænicura*, Hal.
- (5) 6. Abdomen entirely black; radial areolet remote from the tip of the wing.
- (8) 7. Radial nervure slightly sinuated before the extremity ... 3. *talaris*, Hal.
- (7) 8. Radial nervure forming a regular parabolic curve, not sinuated.
- (10) 9. Metathorax carinated; antennæ about 36-jointed; 2nd discoidal areolet imperfectly closed on the outer side; length, 2 lines ... 4. *semirugosa*, Hal.
- (9) 10. Metathorax not carinated; antennæ 28-jointed; 2nd discoidal areolet completely closed; length, 1½ lines ... 5. *striatula*, Hal.
- (4) 11. Second abdominal segment entirely smooth, like all the following.
- (15) 12. Legs black, with only the knees, the tarsi, and the fore tibiæ more or less testaceous or brownish.
- (14) 13. Antennæ longer than the body, 25-jointed in the ♀, 31-jointed in the ♂; stigma elongate, rather stout, acuminate at the outer end, black like the nervures; radial areolet longer than the præbrachial; radial nervure very faintly sinuated ... 6. *tristis*, Nees.
- (13) 14. Antennæ of the ♀ not longer than the head and thorax, 15-17-jointed, those of the ♂ almost as long as the body, 21-jointed; stigma short, stout, obtuse at both ends, testaceous or pale brown like the nervures; radial areolet not longer than the præbrachial; radial nervure sinuated ... 7. *ampliator*, Nees.
- (12) 15. Legs entirely testaceous, or at most the hind femora partly black, and the 4 anterior sometimes streaked with black.
- (19) 16. Large species, about 2½ lines long; antennæ 36-49-jointed.
- (18) 17. Abdomen spatulate, 1st segment linear, about 3 times as long as the hind coxæ; antennæ 44-49-jointed; the largest species ... 8. *petiolata*, Nees.
- (17) 18. Abdomen oblong, 1st segment linear, about twice as long as the hind coxæ; antennæ 36-jointed. ... 9. *egregia*, Marsh.
- (16) 19. Smaller species; antennæ of the ♀ usually 21-35-jointed, but 40-jointed in *lateralis* and 42-jointed in *cincta*; those of the ♂ 21-37-jointed, but 40-jointed in *senilis*, and 43-jointed in *lateralis*.
- (23) 20. Stigma thicker than the length of the 1st abscissa.
- (22) 21. Stigma dark ferruginous, more than 4 times as long as broad; recurrent nervure hardly rejected; 2nd discoidal areolet oblong ... 10. *temula*, Hal.
- (21) 22. Stigma blackish, scarcely 3 times as long as broad; recurrent nervure sensibly rejected; 2nd discoidal areolet short, quadrate ... 11. *macrospila*, Hal.
- (20) 23. Stigma not so thick as the length of the 1st abscissa.
- (25) 24. Metathorax and 1st abdominal segment covered with dense pubescence, concealing the sculpture of the surface; hind femora blackish, or streaked with blackish on the upper edge ... 12. *senilis*, Nees.

- (24) 25. The pubescence not so dense as to conceal the surface, or this latter almost bare; hind femora entirely pale, or at most with a faint streak on the upper edge.
- (27) 26. Length about $\frac{3}{4}$ line; the smallest species ... 13. *misella*, Marsh.
- (26) 27. Length much more than $\frac{3}{4}$ line.
- (29) 28. Radial areolet shorter than the præbrachial ... 14. *albipes*, Hal.
- (28) 29. Radial areolet equalling or exceeding the præbrachial in length.
- (45) 30. Furrow of the mesopleuræ rugose or punctate.
- (34) 31. Antennæ 37-43-jointed.
- (33) 32. Antennæ one-half longer than the body; radial nervure distinctly sinuated; 1st abdominal segment 3 times as long as broad ... 15. *lateralis*, Hal.
- (32) 33. Antennæ very little longer than the body; radial nervure hardly sinuated; 1st abdominal segment twice as long as broad ... 16. *cincta*, Hall.
- (31) 34. Antennæ 25-35-jointed.
- (38) 35. Abdomen short, as broad as the thorax, depressed in the ♂, convex in the ♀, and not compressed posteriorly (but the ♀ of *lepida* is unknown).
- (37) 36. Legs elongate, whitish-yellow, as well as the squamulæ; wings ample, obtusely subtruncate at the extremity ... 17. *lepida*, Marsh.
- (36) 37. Legs not unusually long, dingy testaceous, as well as the squamulæ; wings not remarkably broad and long, regularly rounded at the extremity ... 18. *ovalis*, Marsh.
- (35) 38. Abdomen linear, not so broad as the thorax, compressed posteriorly in the ♀.
- (40) 39. Squamulæ black ... 19. *leptogaster*, Hal.
- (39) 40. Squamulæ rufescent or flavescent.
- (42) 41. Abdomen testaceous with the 1st segment black ... 20. *postica*, Hal.
- (41) 42. Abdomen black with the 2nd segment testaceous.
- (44) 43. Head subcubic, as broad as long, not dilated behind the eyes; stigma and nervures pale yellowish ... 21. *diremta*, Hal.
- (43) 44. Head transverse, dilated behind the eyes; stigma and nervures dark brown ... 22. *gracilis*, Nees.
- (30) 45. Furrow of the mesopleuræ smooth or obsolete.
- (47) 46. First cubital areolet confounded with the 1st discoidal ... 23. *aphanta*, Marsh.
- (46) 47. First cubital areolet discrete.
- (49) 48. Radial areolet approximating the tip of the wing; stigma very elongate, linear, attenuated ... 24. *stramineipes*, Hal.
- (48) 49. Radial areolet remote from the tip of the wing; stigma linear, attenuated, but less elongated.
- (51) 50. Stigma elongate, emitting the radial nervure not far from its base, which is the slenderest part; abdomen blackish or piceous; terebra short, exerted ... 25. *areolaris*, Nees.
- (50) 51. Stigma somewhat shorter, emitting the radial nervure at less than one-fourth of its length, and dilated at the anastomosis; abdomen blackish, the segments cinctured with pale testaceous; terebra as long as half the abdomen ... 26. *clandestina*, Hal.

- (3) 52. Recurrent nervure pointing to the lower interior angle of the 2nd cubital areolet.
 (54) 53. Stigma as long as the præbrachial areolet; radial nervure inflexed in the middle, almost forming an obtuse angle, and indicating the 2nd and 3rd abscissas, of which the 3rd is straight, and ends on the metacarp in an acute angle, remote from the tip of the wing 27. *aquilegiæ*, Marsh.
 (53) 54. Stigma much longer than the præbrachial areolet; radial nervure slightly sinuated in the middle, but not showing the structure of sp. 27.
 (56) 55. Furrow of the mesopleuræ obsolete 28. *abdita*, Hal.
 (55) 56. Furrow of the mesopleuræ visible, crenulate 29. *gilvipes*, Hal.

(To be continued.)

EXPLANATION OF PLATE VII.

ALYSIIDÆ.

- FIG. 1. Wing of *Adelura florimela*, Hal.
 2. *Adelura dictynna*, Marsh.
 3. Wing of *Adelura apii*, Curtis.
 4. „ „ *Anisocyrta perdita*, Hal.
 5. „ „ *Prosapha speculum*, Hal., ♂.
 6. „ „ „ *venusta*, Hal., ♀.
 7. „ „ *Mesocrina venatrix*, Marsh.
 8. „ „ *Orthostigma pumila*, Nees.
 9. „ „ *Aspilota nervosa*, Hal.

DACNUSIDÆ.

10. *Ænone hians*, Hal., ♂.
 11. Wing of *Liposcia discolor*, Först.
 12. *Dacnusa adducta*, Hal., ♀.